

**CALENDAR ITEM
C70**

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S 26

04/20/17
W 27071
L. Pino

GENERAL LEASE – OTHER USE

APPLICANT:

Marine BioEnergy, Inc.

PROPOSED LEASE:

AREA, LAND TYPE, AND LOCATION:

Sovereign land in the Pacific Ocean, offshore of Howland's Landing and Parson's Landing, at Santa Catalina Island, Los Angeles County.

AUTHORIZED USE:

Placement and monitoring of up to four Kelp Elevators (research moorings), and data collection in two phases, as follows: Phase 1: two elevators at Site 1, shallow water site; and Phase 2: either one elevator at Site 2, deep water site, or two elevators at Sites 3 and 4, deep water sites; removal of all improvements upon completion of research project, prior to lease expiration.

LEASE TERM:

Three years, beginning April 20, 2017.

CONSIDERATION:

\$125 per year.

SPECIFIC LEASE PROVISIONS:

- Lessee shall notify Lessor in writing to identify site selection for Phase 2 at least 15 days before installing the associated Kelp Elevator(s).
- Lessee shall notify Lessor in writing within 15 days of installation of each Kelp Elevator of the exact location and GPS coordinates of each buoy.
- Lessee shall provide notification to the Commander, United States Coast Guard District 11, for inclusion in the Local Notice to

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Mariners, at least 14 days prior to each Kelp Elevator installation and removal.

- Liability insurance in an amount no less than \$1,000,000 per occurrence.

STAFF ANALYSIS AND RECOMMENDATION:

Authority:

Public Resources Code sections 6005, 6216, 6301, and 6501; California Code of Regulations, title 2, section 2000, subdivision (b).

Public Trust and State's Best Interests Analysis:

Applicant has submitted an application for a General Lease – Other Use, for a joint research project sponsored by the Department of Energy (DOE) in conjunction with the University of Southern California's (USC) Wrigley Institute for Environmental Studies to test a cost-efficient system for cultivating kelp in the open ocean. The Applicant's project would test depth cycling impacts on locally acquired kelp species.

The Applicant proposes to install up to four Kelp Elevators (temporary research moorings) for monitoring and data collection, in the Pacific Ocean, off the northwest coast of Santa Catalina Island (Catalina). The Kelp Elevators would be installed in two phases. Phase 1 includes installation of two Kelp Elevators at Site 1, a shallow water site approximately 0.6 mile offshore from Howland's Landing. Phase 2 includes installation of either one Kelp Elevator at Site 2, a deep water site located approximately one mile offshore of Howland's Landing, or two Kelp Elevators (one per site) at Sites 3 and 4, deep water sites approximately two miles offshore of Parson's Landing. Placement of Kelp Elevators at Sites 3 and 4 depends upon data results obtained from Phase 1, and whether the project sponsor requires testing at depths greater than available at Site 2. Following mooring deployment and data collection in Phase 1, the Applicant will inform Commission staff prior to beginning Phase 2 as to whether Site 2, or Sites 3 and 4 will be utilized. For project purposes, Site 1 is designated as shallow water site SS; Site 2 is designated as deep water site DS A; and Sites 3 and 4 are designated collectively as deep water site DS B.

The Applicant selected the sites along the northwest coastline of Catalina based on characteristics such as appropriate depth and soft sandy bottom substrate. Additionally, the sites are close to the USC Wrigley Marine Science Center and avoid areas with sensitive environmental habitats,

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commercial and recreational fishing areas, or heavy boat traffic. Although the maximum swing radius of the moorings extends to waters deep enough for prawn fishing, the moorings will be placed as close as possible to the boundaries of the three Marine Protected Areas (MPAs) near the project sites in order to minimize or eliminate potential conflicts with commercial prawn fishing operations. The three MPAs are: Bird Rock State Marine Conservation Area (SMCA); Blue Cavern SMCA; and Arrow Point to Lion Head Point SMCA.

The Applicant proposes to use Kelp Elevators to move kelp between different depths. Each Kelp Elevator is comprised of a marker buoy, a winch and winch cable used to raise and lower a sliding boom, an anchor line and an anchor, and a 3D Doppler Profiler to measure water current velocity. Kelp will be collected from Catalina waters to be transplanted and attached to the Kelp Elevators. Researchers will affix the kelp to the moored structures and monitor growth rates and other indicators of health over multiple cycles in the ocean environment. Each cycle will last about one month.

The project's target species will be locally acquired giant kelp (*Macrocystis pyrifera*) and *Laminaria* (*Laminaria farlowii*). The Applicant has already filed applications for Scientific Collecting Permits with the California Department of Fish and Wildlife to work with these species. If initial tests with these species are unsuccessful, the Applicant may decide to conduct subsequent tests with back-up local species including feather boa kelp (*Egregia menziesii*) and/or Elk kelp (*Pelagophycus porra*).

During the day, the kelp will be raised near the surface (about 5 to 10 meters) to gather sunlight for photosynthesis. At night, a winch will automatically lower the structures to the thermocline (about 40 meters below the surface) where the kelp can absorb nutrients that are not available in surface waters. The structures will remain in place from approximately May 1, 2017 thru December 31, 2019. Research activities will be divided into two phases, as described below.

Phase1 — Shallow-Depth and Nursery Phase (Years 1 to 3): Kelp elevators will be anchored nearshore in water depths of approximately 83 meters. A fixed Kelp Elevator mooring will hold control kelp stationary; while kelp on the experimental Kelp Elevator will be cycled from the near surface to depths of about 40 meters. The Applicant will also collect broodstock giant kelp material from local Catalina kelp beds to cultivate young kelp in USC's onshore nursery. If successful, these individuals will also be deployed on the Kelp Elevators to test viability and health. If successful, the study will be replicated using *Laminaria*. Other locally available kelp

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species may be considered in Year 2 if these initial species are unsuccessful.

Phase 2 — Deep-Water Phase (Years 2 to 3): Based on results from the Shallow-Depth testing in Year 1, the Applicant will perform the same test at greater depths. In Year 2, the Applicant will install either an additional experimental Kelp Elevator in deeper waters at Site 2 or two additional Kelp Elevators (one control and one experimental) at Site 3 and 4 to compare kelp performance to a control group and shallow installations maintained at the Phase 1 Site 1 location.

The proposed project, seeks to demonstrate that kelp farming in extensive regions of the Pacific Ocean could be commercially viable utilizing this process. As a biofuel, kelp has the potential to provide a green-energy alternative to fossil fuels- since it grows in the ocean, it does not compete with food production for land, and does not require fresh water, pesticides, or artificial fertilizers. Also, biofuels are considered carbon neutral (the amount of carbon produced as fuel is offset by the amount of carbon absorbed during growth) and could augment or replace both imported and domestic petroleum, thereby helping meet California's energy and emissions goals identified in Assembly Bill 32 (Stats. 2006, Ch. 488).

Courts have recognized scientific study, like the subject project, as proper use of trust resources under the common law Public Trust Doctrine (*Marks v. Whitney* (1971) 6 Cal.3d 374, 380).

The Lease is limited to a 3-year term and does not grant the lessee exclusive rights to the Lease Premises. Upon termination of the Lease, lessee will remove all improvements from State land. The proposed Lease requires the lessee to insure the Lease Premises and indemnify the State and pay annual rent for the occupation of the public land. In addition, the location of the Kelp Elevators are being selected to minimize any interference with Public Trust resources like sensitive environmental habitat, fishing areas and boat channels.

Climate Change Analysis:

The project is a 3-year research/monitoring project offshore Catalina. The activity would not involve the construction of permanent structures or facilities, and all temporary structures would be located underwater. Due to the type of activity and short-term, temporary nature of the project, sea-level rise will not impact the project.

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Conclusion:

For all the reasons above, Commission staff believes the issuance of this Lease is consistent with the common law Public Trust Doctrine, will not substantially interfere with Public Trust needs at this location at this time and for the foreseeable term of the proposed lease, and is in the best interests of the State.

OTHER PERTINENT INFORMATION:

1. The proposed work has been funded by a 2016-2019 award to Marine BioEnergy, Inc. by the U.S. Department of Energy (Award No. DE-AR0000689).
2. The U.S. Department of Energy award has a strict timeline, and the project must deploy by May 1, 2017 to take advantage of funding - the Applicant is restricted from accessing award funding until all permissions have been received. To accommodate this strict timeline and provide the Applicant enough lead time to place and complete build orders for the Kelp Elevators, Commission staff provided a Letter of Non-objection to the applicant on January 26, 2017, with the understanding that a lease for the project is required, and the issuance of such lease is contingent upon approval by the Commission. If the project is denied, the Applicant will be required to remove all improvements at its sole risk and responsibility.
3. This action is consistent with Strategy 1.1 of the Commission's Strategic Plan to deliver the highest levels of public health and safety in the protection, preservation and responsible economic use of the lands and resources under the Commission's jurisdiction.
4. Staff recommends that the Commission find that this activity is exempt from the requirements of the California Environmental Quality Act (CEQA) as a categorically exempt project. The project is exempt under Class 6, Information Collection; California Code of Regulations, title 14, section 15306.

Authority: Public Resources Code section 21084 and California Code of Regulations, title 14, section 15300.

5. This activity involves lands identified as possessing significant environmental values pursuant to Public Resources Code section 6370 et seq., but such activity will not affect those significant lands. Based upon staff's consultation with the persons nominating such lands and through the CEQA review process, it is staff's opinion that the project, as proposed, is consistent with its use classification.

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FURTHER APPROVALS REQUIRED:

California Department of Fish & Wildlife – Scientific Collecting Permit
California Coastal Commission – Coastal Development Permit (de minimis waiver)
U.S. Army Corps of Engineers – Letter of Permission
Los Angeles Regional Water Quality Control Board – 401 Certification

EXHIBITS:

- A-1. Land Description Site 1
- A-2. Land Description Site 2
- A-3. Land Description Sites 3 and 4
- B-1. Site and Location Map Site 1
- B-2. Site and Location Map Site 2
- B-3. Site and Location Map Sites 3 and 4

RECOMMENDED ACTION:

It is recommended that the Commission:

CEQA FINDING:

Find that the activity is exempt from the requirements of CEQA pursuant to California Code of Regulations, title 14, section 15061 as a categorically exempt project, Class 6, Information Collection; California Code of Regulations, title 14, section 15306.

PUBLIC TRUST AND STATE'S BEST INTEREST:

Find that the issuance of this lease is consistent with the common law Public Trust Doctrine, will not substantially interfere with Public Trust needs at this location at this time and for the foreseeable term of the proposed lease, and is in the best interests of the State.

SIGNIFICANT LANDS INVENTORY FINDING:

Find that this activity is consistent with the use classification designated by the Commission for the land pursuant to Public Resources Code section 6370 et seq.

AUTHORIZATION:

1. Authorize issuance of a General Lease – Other Use to Marine BioEnergy, Inc. beginning April 20, 2017, for a term of three years, for the placement, monitoring, and data collection of up to four Kelp Elevators (research moorings), as described in Exhibits A1, A-2, and A-3, and as shown in Exhibits B1, B-2, and B-3 (for reference purposes only) attached and by this reference made a part hereof; annual rent in the amount of \$125 ; and liability insurance in an amount no less than \$1,000,000 per occurrence.

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2. Authorize removal of improvements from lease premises upon completion of research project, prior to expiration of lease.

EXHIBIT A-1
(SITE 1)
LAND DESCRIPTION

W 27071

A parcel of submerged land situate in the bed of Pacific Ocean, Northwest of Catalina Island, Los Angeles County, State of California, more particularly described as follows:

BEGINNING at a point which bears N 49° 31' 35" W 39,522.96 feet from a NGS Horizontal control disk stamped AVX A 1992 (PID DY9310) thence along the following four courses:

1. N 43°15'50" E 1087.04 feet;
2. S 49°44'59" E 2182.36 feet;
3. S 42°43'38" W 1102.32 feet;
4. N 49°20'16" W 2191.93 feet to the point of beginning

END OF DESCRIPTION

The basis of bearings of this description is the California Coordinate System of 1983, Zone 6. All distances are grid distances.

Prepared 02/27/2017 by the California State Lands Commission Boundary Unit.



EXHIBIT A-2
(SITE 2)
LAND DESCRIPTION

W 27071

A parcel of submerged land situate in the bed of Pacific Ocean, Northwest of Catalina Island, Los Angeles County, State of California, more particularly described as follows:

BEGINNING at a point which bears N 42° 00' 48" W 31,926.97 feet from a NGS Horizontal control disk stamped AVX A 1992 (PID DY9310) thence along the following four courses:

1. N 87° 56' 19" W 2235.80 feet;
2. N 02° 18' 40" E 2208.88 feet;
3. S 87° 18' 14" E 2215.80 feet;
4. S 01° 47' 09" W 2184.34 feet to the point of beginning

END OF DESCRIPTION

The basis of bearings of this description is the California Coordinate System of 1983, Zone 6. All distances are grid distances.

Prepared 02/27/2017 by the California State Lands Commission Boundary Unit.



EXHIBIT A-3
(SITE 3 & 4)
LAND DESCRIPTION

W 27071

Two (2) parcels of submerged land situate in the bed of Pacific Ocean, Northwest of Catalina Island, Los Angeles County, State of California, more particularly described as follows:

SITE 3

BEGINNING at a point which bears N 37° 27' 51" W 45,666.85 feet from a NGS Horizontal control disk stamped AVX A 1992 (PID DY9310) thence along the following four courses:

1. N 65°25'18" W 5,300.67 feet;
2. N 26°12'01" E 5,148.18 feet;
3. S 65°42'17" E 5,147.13 feet;
4. S 24°29'27" W 5,171.57 feet to the point of beginning

SITE 4

BEGINNING at a point which bears N 41° 34' 28" W 52,402.96 feet from a NGS Horizontal control disk stamped AVX A 1992 (PID DY9310) thence along the following four courses:

1. N 78°12'32" W 4584.27 feet;
2. N 10°48'56" E 4458.65 feet;
3. S 78°25'51" E 4568.34 feet;
4. S 10°36'55" W 4476.64 feet to the point of beginning

END OF DESCRIPTION

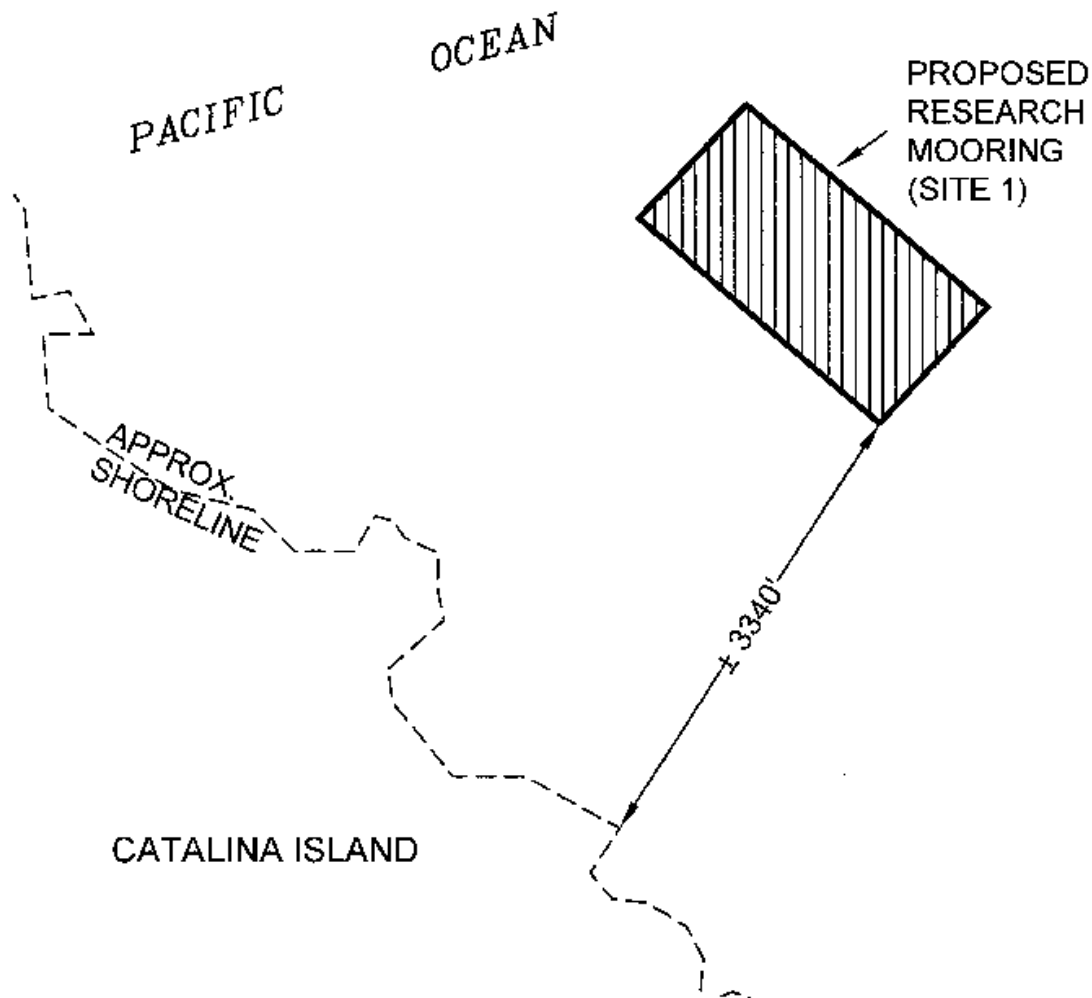
The basis of bearings of this description is the California Coordinate System of 1983, Zone 6. All distances are grid distances.

Prepared 02/27/2017 by the California State Lands Commission Boundary Unit.



NO SCALE

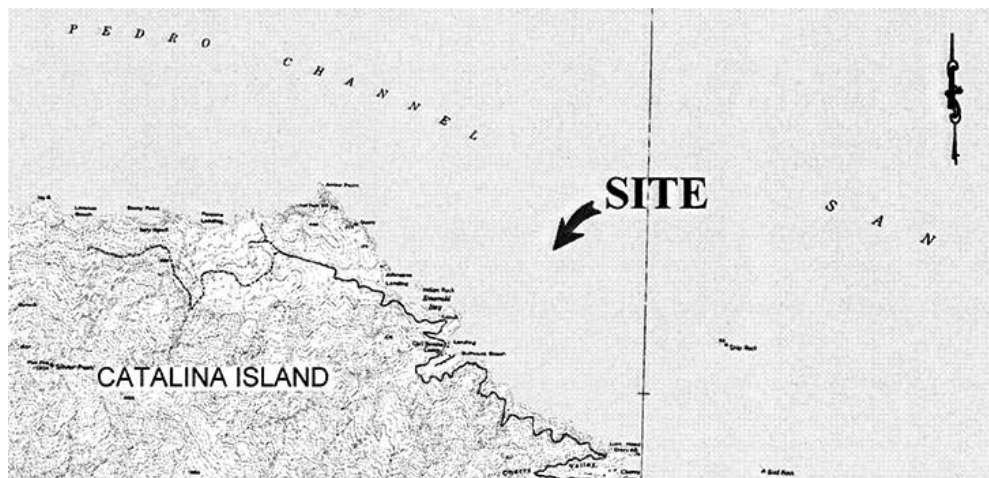
SITE



PACIFIC OCEAN OFF THE NORTHWEST COAST OF SANTA CATALINA ISLAND

NO SCALE

LOCATION

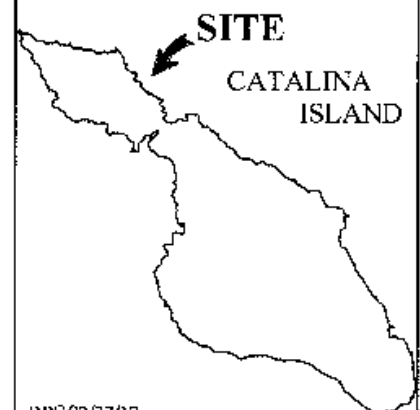


MAP SOURCE: USGS QUAD

This Exhibit is solely for purposes of generally defining the lease premises, is based on unverified information provided by the Lessee or other parties and is not intended to be, nor shall it be construed as, a waiver or limitation of any State interest in the subject or any other property.

Exhibit B-1

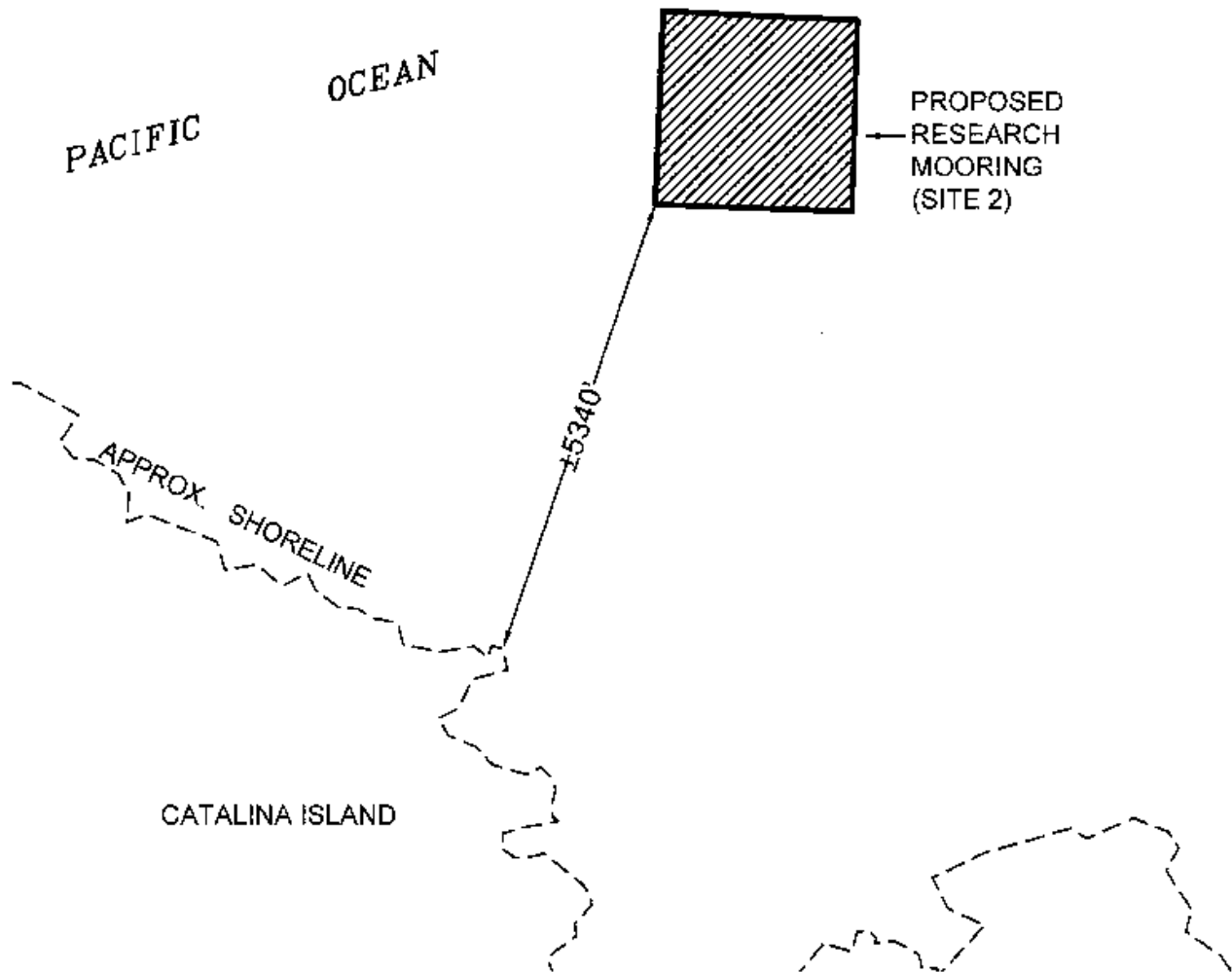
W 27071
MARINE BIOENERGY, INC
GENERAL LEASE -
OTHER
LOS ANGELES COUNTY



RPF02/27/17

NO SCALE

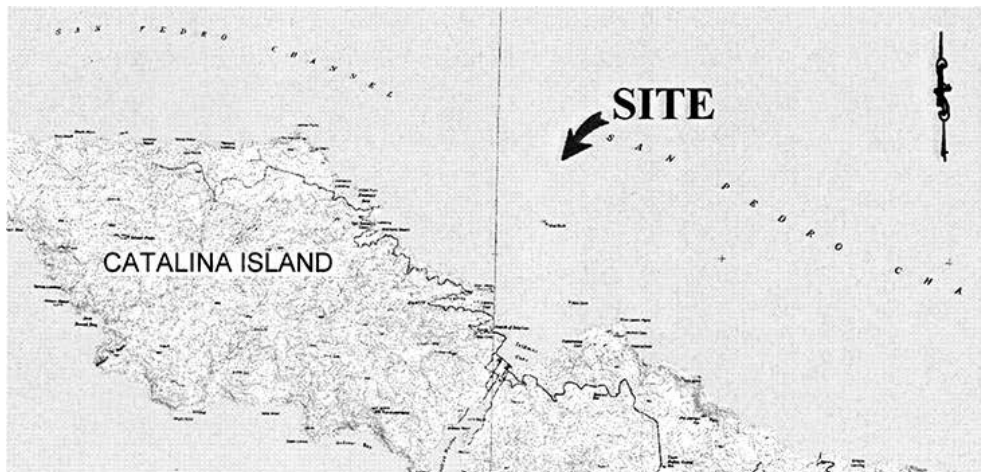
SITE



PACIFIC OCEAN OFF THE NORTHWEST COAST OF SANTA CATALINA ISLAND

NO SCALE

LOCATION

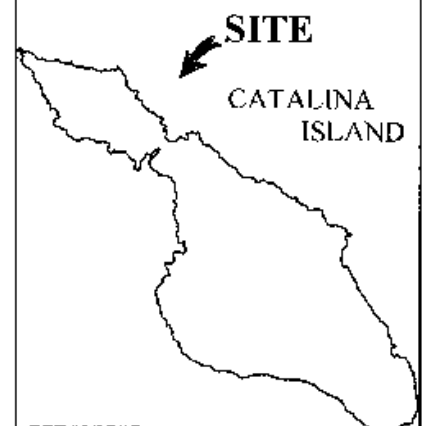


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Exhibit B-2

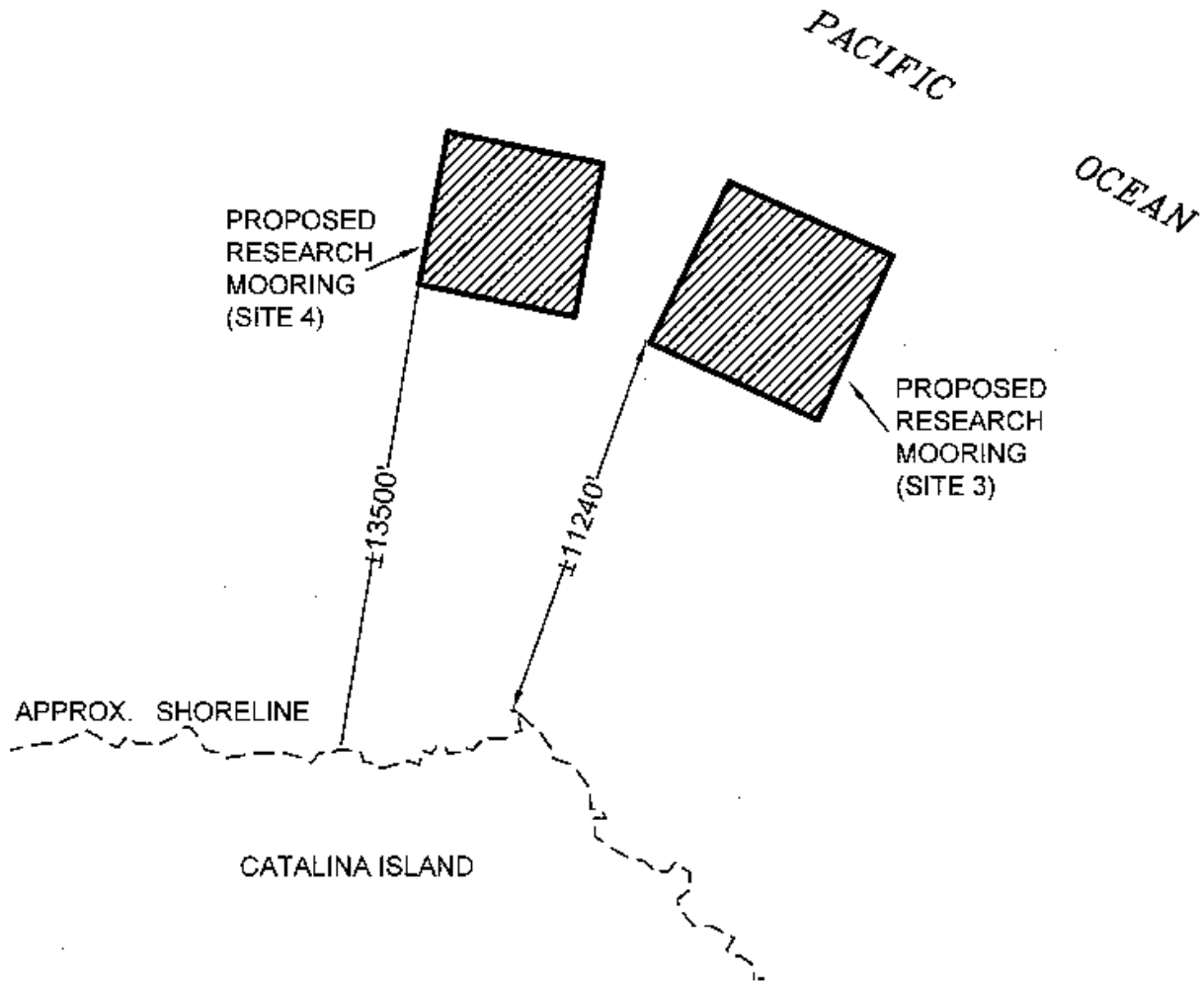
W 27071
MARINE BIOENERGY, INC
GENERAL LEASE -
OTHER
LOS ANGELES COUNTY



RPF 02/27/17

NO SCALE

SITE



PACIFIC OCEAN OFF THE NORTHWEST COAST OF SANTA CATALINA ISLAND

NO SCALE

LOCATION

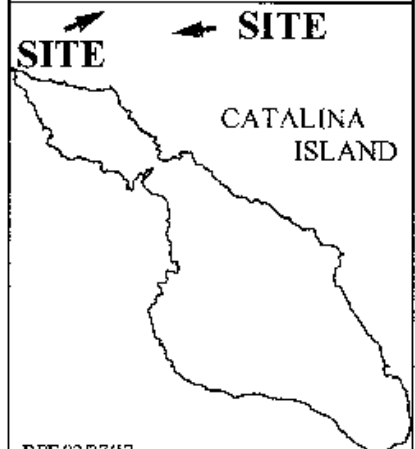


MAP SOURCE: USGS QUAD

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Exhibit B-3

W 27071
MARINE BIOENERGY, INC
GENERAL LEASE -
OTHER
LOS ANGELES COUNTY



RPT 02/27/17